S
628.161
M26aqs
1992

ENVIROCON, INC.

101 INTERNATIONAL WAY
POST OFFICE BOX 8243
MISSOULA, MONTANA 59807
TELEPHONE: (406) 523-1150
FAX: (406) 523-1182

STATE DOCUMENTS COLLECTION

AUG 4 1993

MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

October 21, 1992
ENV #140101

ENVIROCON, INC.

Montana Department of Health and
Environmental Sciences
Solid and Hazardous Waste Bureau
Cogswell Building
Helena, Montana 59620

SUPERFUND

Attention: Mr. John Wadhams

Subject: Second Indoor Air Work Plan for the Livingston Rail Yard Project

Dear John:

This final second indoor-air work plan is submitted in response to Montana Department of Health and Environmental Sciences' (MDHES') October 19, 1992 comments on and approval of Envirocon's October 8, 1992 work plan. This work plan details the scope of work to be conducted by Envirocon, representing Burlington Northern Railroad Co. (BNRR), in completing the indoor air investigations.

To date, BNRR has conducted two indoor-air investigations. Phase I involved the evaluation of indoor air data collected by the MDHES during three sampling events in 1989 and data collected by BNRR during one sampling event in 1990. Phase II involved the sampling of approximately 20 residences by BNRR during two sampling events in 1992.

The Phase III indoor-air investigation will involve the sampling of three residences before and after MDHES' installation of test ventilation systems. The Phase IV indoor-air investigation will involve sampling and analyses of 1) additional residences that meet MDHES' established sampling criteria; 2) four ambient air locations; and 3) the Eastside School.

The following is the scope of work for Phases III and IV:

PHASE III

Envirocon will sample three homes selected by MDHES (NE-3, NE-1, and SE-5, Livingston Rail Yard Indoor Air Quality Investigation Report, Envirocon,

PLEASE RETURN

MONTANA STATE LIBRARY
S 628.161 M2ksep 1992 c.1
Second indoor air work plan for the Livi
3 0864 00084970 6

1992) prior to and after the installation of test ventilation systems by MDHES. Sampling and analyses will be conducted in accordance with the Livingston Rail Yard Indoor Air Quality Investigation Work Plan (Envirocon, 1992). Sampling locations will be the original sampling locations used during the Phase II indoor-air investigations. The samples will be analyzed for tetrachloroethene (PCE); trichloroethene (TCE); cis-1,2-dichloroethene (c-DCE); and trans-1,2-dichloroethene (t-DCE). As requested in the September 18 letter, one sample from each home collected prior to the installation of the test ventilation systems will be analyzed for vinyl chloride.

In addition to using the Phase II sampling and analytical methodologies, Envirocon will collect collocated duplicate samples using passive dosimeters. Included as Attachment A is a technical paper by Shields and Weschler on the use of passive dosimeters for monitoring volatile organic compounds (VOCs) in non-industrial settings. During this evaluation, sample durations will be determined. Envirocon and MDHES will evaluate this methodology and decide if passive dosimeters are suitable for use during the Phase IV indoor-air investigation.

PHASE IV

The Phase IV indoor-air investigation will involve sampling the residences of interested parties within the specified study area that have either a crawl space or basement and have not been sampled to-date. In addition, three trailer homes within the study area will be selected by MDHES. The study area includes the original study area with the expansion of the northeast study area to the north, as shown on Figure 1.0.

Two samples will be collected from each residence. Sampling and analytical methodologies will consist of either the original methodologies detailed in the Livingston Rail Yard Indoor Air Quality Investigation Work Plan or passive dosimeters, contingent upon MDHES' approval. Samples will be analyzed for PCE with detection limits of 5 ug/m^3.

Passive dosimeter sampling is based upon the molecular diffusion for the contact between vapor-phase compounds and the charcoal sorbent. Passive dosimeters used for sampling of non-occupational levels of VOCs are exposed for up to four weeks, providing a time-weighted average VOC concentration compared to the standard sampling methodology, which collects the sample

over a period of four hours. Sample duration for the passive dosimeters will be established during Phase III to achieve the 5 ug/m^3 detection limit.

As we discussed, four ambient air samples will be collected and analyzed according to the original Phase II methodologies. Ambient air sample locations were selected to facilitate identification of VOCs unrelated to the Livingston Rail Yard and are shown on Figure 1.0. The three sample locations include one sample location upwind from the Eastside school, one sample location upwind from the rail yard, and one sample location downwind from the rail yard. Ambient air samples will be collected when the wind is from the southwest (approximately 235 degrees). In addition, the MDHES will select a fourth ambient air sample location.

As we also discussed, the Eastside School will be sampled during the Phase IV investigation. The school will be sampled at the same time as the residences, using the same sampling and analytical methodologies.

Quality assurance/quality control, documentation, and reporting for both phases will be consistent with the Livingston Rail Yard Indoor Air Quality Investigation Work Plan.

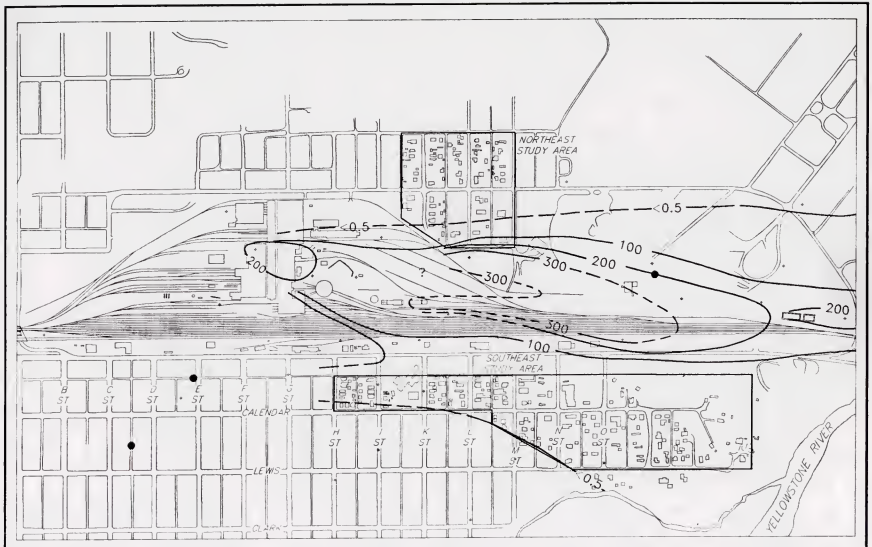
Phase IV will begin following MDHES' identification of residences meeting the sampling criteria.

If you have any questions or comments, please contact me at your convenience.

Sincerely,

Kris Kok
Project Manager

KK/pm
Attachments
cc: Mel Burda
Leo Berry
Steve Pilcher
Joe Michaletz
John Mills
Dan McCaffery



LEGEND

● AMBIENT AIR SAMPLE LOCATIONS

BURLINGTON NORTHERN

ENVIROCON, INC.

LIVINGSTON RAIL YARD
INDOOR AIR INVESTIGATION

FEBRUARY 1991
GROUND WATER PLUME
(PCE, DCE, TCE)

AutoCad FILE: AQPUB4.DWG | 10/06/92 | FIGURE 1.0